In the claims

Cancel claims 1-18.

Amend claims 19 and 24 of remaining claims 19-40.

1-18 (Canceled)

19. (Currently Amended) A method of making a magnetic layer with in-plane anisotropy and high H_K after hard axis annealing in the presence of a field perpendicular to the plane comprising the steps of:

providing a DC magnetron which has a chamber, a target and a substrate;

the target being NiFeCo;

providing a first process gas in the chamber which is composed of an inert gas and a nitrogen containing gas;

sputtering the target to form said magnetic layer composed of NiFeCo-O-N or NiFeCo-N on the substrate; and

hard axis annealing the magnetic layer in the presence of a magnetic field perpendicular to a major plane of the magnetic layer until the magnetic layer has an H_K from 2.6 Oe to 6.0 Oe and ~~in plane~~ in-plane anisotropy.

20. (Original) A method as described in claim 19 wherein no bias is applied to the substrate.

21. (Original) A method as described in claim 19 wherein the first process gas includes 1.6% to 3.2% N_2O and the magnetic layer includes multiple sputtered NiFeCo-O-N or NiFeCo-N films.

22. (Original) A method as described in claim 19 wherein the first process gas includes 1.6% to 3.2% N_2O and the magnetic layer is a single film 2,500 Å to 6,000 Å thick.

23. (Original) A method as described in claim 19 wherein the first process gas includes 1.0% to 2.0% N_2 and the magnetic layer is a single film 4,500 Å to 18,000 Å thick.

24. (Currently Amended) A method as described in claim 19 wherein the target is $(Ni_{0.80+x}Fe_{0.20-x})_{1-y}Co_y$ where $-0.05 \leq x \leq 0.05$ and $0.00 \leq y \leq 0.15$ ~~(wt. fraction).~~ (weight fraction).

25. (Original) A method as described in claim 19 wherein the first process gas is said inert gas and N_2 and the target is sputtered to form the magnetic layer of at least a single film of NiFeCo-N about 1.8 μm thick.

26. (Original) A method as described in claim 25 wherein the first process gas includes 1.0% to 2.0% N_2.

27. (Previously Amended) A method as described in claim 26 wherein during sputtering the first target, a pressure between 1×10^{-3} to 3×10^{-3} mbar is maintained within said chamber and the magnetic layer comprises one or more films of NiFeCo-N from 4,500 Å to 18,000 Å thick.

28. (Original) A method as described in claim 19 including:

the first process gas being said inert gas and N_2O;

sputter depositing multiple interlayer films of Al_2O_3 or SiO_2; and

sputtering the target multiple times to deposit multiple NiFeCo-O-N magnetic films;

and alternating the depositions to form the magnetic layer as a lamination of magnetic and interlayer films.

29. (Previously Amended) A method of making a magnetic layer with in-plane anisotropy and high H_K after hard axis annealing in the presence of a field perpendicular to the plane comprising the steps of:

providing a DC magnetron which has a chamber, a target and a substrate;

the target being NiFeCo;

providing a first process gas in the chamber which is composed of an inert gas and N_2O;

sputtering the target to form said magnetic layer composed of NiFeCo-O-N or NiFeCo-N on the substrate;

sputter depositing multiple interlayer films of Al_2O_3 or SiO_2;

sputtering the target multiple times to deposit multiple NiFeCo-O-N magnetic films;

alternating the depositions to form the magnetic layer as a lamination of magnetic and interlayer films;

hard axis annealing the magnetic layer at about 232° C in the presence of magnetic field perpendicular to a major plane of the magnetic layer for about 400 minutes; and

after said hard axis annealing, the magnetic layer having an H_K from 2.6 Oe to 6.0 Oe and in plane anisotropy.

30. (Original) A method as described in claim 28 wherein the first process gas includes 1.6% to 3.2% N_2O and each of the NiFeCo-O-N films is about 4,500 Å thick.

31. (Original) A method as described in claim 28 wherein no bias is applied to the substrate.

32. (Allowed) A method of making a magnetic layer with in-plane anisotropy and high H_K after hard axis annealing in the presence of a field perpendicular to the plane comprising the steps of:

providing a DC magnetron which has a chamber, a target and a substrate;

the target being NiFeCo;

providing a first process gas in the chamber which is composed of an inert gas and N_2O;

sputtering the target to form said magnetic layer composed of NiFeCo-O-N or NiFeCo-N on the substrate;

before sputtering the target, sputter depositing a seed layer of NiFeCo-O-N with a second process gas that has a higher N_2O content than the first process gas;

sputter depositing multiple interlayer films of Al_2O_3 or SiO_2;

sputtering the target multiple times to deposit multiple NiFeCo-O-N magnetic films; and

alternating the depositions to form the magnetic layer as a lamination of magnetic and interlayer films.

33. (Allowed) A method as described in claim 32 wherein the seed layer is 25 Å to 200 Å thick.

34. (Allowed) A method as described in claim 32 including:

before sputter depositing the seed layer, sputter depositing a bottom layer of SiO_2 so that the seed layer is located between the bottom layer and the magnetic layer.

35. (Allowed) A method as described in claim 32 wherein the N_2O content in the second process gas is from 2.4% to 4.0%.

36. (Allowed) A method as described in claim 35 wherein no bias is applied to the substrate.

37. (Allowed) A method as described in claim 36 including:

before sputter depositing the seed layer, sputter depositing a bottom layer of SiO_2 so that the seed layer is located between the bottom layer and the magnetic layer.

38. (Allowed) A method as described in claim 37 wherein the seed layer is 25 Å to 200 Å thick.

39. (Allowed) A method as described in claim 38 wherein the bottom layer is about 25 Å thick.

40. (Allowed) A method as described in claim 39 wherein four NiFeCo-O-N magnetic films are deposited with each magnetic film being about 4500 Å thick and each interlayer film being about 25 Å thick.